

Amendments to the Claims

This listing of claims will replace all prior versions and listings of claims in the application.

Listing of Claims

1. **(Currently Amended)** In a data communications architecture comprising one or more operatively coupled SERDES communication links having a transmitting end and a receiving end, a method to detect errors in data communications comprising:
 - calculating a disparity for data being communicated by ~~a serializer~~ one or more operatively coupled serializers in the transmitting end;
 - calculating a serializer data communication error code based on the calculated disparity;
 - communicating data ~~between the serializer and a deserializer~~ from the serializers to one or more operatively coupled deserializers in the receiving end;
 - calculating a disparity on communicated data received by the ~~deserializer~~ deserializers to generate a deserializer data communication error code; and
 - comparing the value of the serializer data communication error code with the value of the deserializer data communication error code.

2. **(Original)** The method as recited in claim 1 further comprising determining whether the value of the serializer data communication error code equals the value of the deserializer data communication error code.

3. **(Original)** The method as recited in claim 2 wherein upon determining the serializer data communication error code value corresponds to the deserializer data communication error code value continuing data communications.

4. **(Currently Amended)** The method as recited in claim 2 wherein upon determining that the values of the serializer data communication error code and the deserializer data communication error code are not equal sending a control signal from the ~~deserializer to the serializer~~ receiving end to the transmitting end.

5. **(Currently Amended)** The method as recited in claim 4 wherein upon receiving a control signal by the ~~serializer transmitting end~~, the ~~serializer~~ serializers cooperating with a data buffer to obtain the data for re-communication to the ~~deserializer receiving end~~.

6. **(Currently Amended)** The method as recited in claim 1 further comprising communicating the serializer data communications error code by the ~~serializer~~ transmitting end to the ~~deserializer receiving end~~.

7. **(Currently Amended)** The method as recited in claim 6 further comprising encoding the serializer data communications error code by the ~~serializer~~ transmitting end to have a specified number of bits for processing by the ~~deserializer receiving end~~.

8. **(Currently Amended)** The method as recited in claim 7, further comprising encoding the serializer data communications error code into a packet of data having n bits,

wherein n is a value dependent on the number of communications ~~channels~~ links employed by the serializer transmitting end and the deserializer receiving end when performing data communications operations.

9. **(Original)** The method as recited in claim 7 further comprising encoding the serializer data communications error code into a ten bit packet.

10. **(Original)** The method as recited in claim 9 further comprising encoding a five bit error code twice to generate a ten bit packet.

11. **(Currently Amended)** A computer readable medium having computer readable instructions to instruct a computer having a communications architecture comprising one or more operatively coupled SERDES communication links having a transmitting end and a receiving end to perform a method comprising:

calculating a disparity for data being communicated by ~~a serializer~~ one or more operatively coupled serializers in the transmitting end;

calculating a serializer data communication error code based on the calculated disparity;

communicating data ~~between the serializer and a deserializer~~ from the serializers to one or more operatively coupled deserializers in the receiving end;

calculating a disparity on communicated data received by the ~~deserializer~~ deserializers to generate a deserializer data communication error code; and

comparing the value of the serializer data communication error code with the value of the deserializer data communication error code.

12. **(Currently Amended)** A system to detect errant data communicated across a data communications architecture comprising one or more operatively coupled SERDES communication links having a transmitting end and a receiving end, the system comprising:

~~a serializer receiving~~ the transmitting end obtaining data and calculating a disparity for the data;

~~a deserializer~~ the receiving end cooperating with the ~~serializer~~ transmitting end to receive the data and the calculated disparity; and

~~an~~ a first error code based on the disparity calculated by the ~~serializer~~ transmitting end for identifying errant data being communicated ~~between the serializer and the deserializer~~ by the transmitting end to the receiving end.

13. **(Currently Amended)** The system as recited in claim 12 wherein the first error code is calculated ~~by the serializer~~ at the transmitting end and communicated to the ~~deserializer~~ receiving end.

14. **(Currently Amended)** The system as recited in claim 13 wherein the first error code is communicated ~~by the serializer to the deserializer~~ from the transmitting end to the receiving end over a dedicated control channel.

15. **(Currently Amended)** The system as recited in claim 12 wherein ~~the~~ a second error code is calculated ~~by the deserializer~~ at the receiving end based on a calculated disparity

calculated using values from the data ~~being communicated by the serializer to the deserializer~~
from the transmitting end to the receiving end.

16. **(Currently Amended)** The system as recited in claim 12 wherein the first error
code is calculated and communicated by the ~~serializer~~ transmitting end when communicating the
data to the ~~deserializer~~ receiving end and the second error code is calculated again by the
~~deserializer~~ at the receiving end upon receiving the data from the ~~serializer~~ transmitting end.

17. **(Currently Amended)** The system as recited in claim 16 wherein the
~~communicated~~ first error code and the ~~deserializer-calculated~~ second error code are compared to
determine if they are equal.

18. **(Currently Amended)** The system as recited in claim 17 wherein upon
determining that the ~~communicated~~ first error code and the ~~deserializer-calculated~~ second error
code are not equal sending a control signal from the ~~deserializer~~ receiving end to the ~~serializer~~
transmitting end requesting the ~~serializer~~ transmitting end to resend the data.

19. **(Currently Amended)** The system as recited in claim 18 further comprising a
data buffer for storing the data for communication and re-communication.

20. **(Currently Amended)** The system as recited in claim 19 wherein the data
buffer stores the data for encoding encoded by the ~~serializer~~ transmitting end.

21. **(Currently Amended)** A method to detect errant data being communicated across a data communications architecture comprising one or more operatively coupled SERDES communication links having a transmitting end and a receiving end, the method comprising:

- obtaining packets of data for communication between two components;
- calculating a disparity value for the data packets;
- encoding the disparity value as an n bit error code, wherein n is a value dependent on the number of communications links employed when performing data communications operations;
- communicating the data and the n bit error code from a transmitting component at the transmitting end to a receiving component at the receiving end;
- re-calculating the disparity and recoding the error code at the receiving component; and
- comparing the recoded error code with the encoded error code to identify a discrepancy,

wherein if a discrepancy is observed then determining that there is errant data communicated from the transmitting to the receiving component of the data communications architecture.

22. **(Original)** The method as recited in claim 21 further comprising sending a control signal from the receiving component to the transmitting component requesting the transmitting component resend the data.

23. **(Original)** The method as recited in claim 21 further comprising setting n to a value of five.

24. **(Currently Amended)** A mechanism for use in a data communications architecture comprising one or more operatively coupled SERDES communication links having a transmitting end and a receiving end so as to detect errant data bits, the mechanism comprising:

first means for calculating an error code for a block of data packets based on a calculated disparity of the bits of data;

second means for communicating the error code and block of data packets from a ~~serializer to a deserializer~~ the transmitting end to the receiving end; and

third means to recalculate the error code at the ~~deserializer~~ receiving end to compare the calculated and recalculated error codes.